

Remarks

Claims 1-28 are pending in the application.

Claims 1, 3, 8-12, 15, 18-21, 23, and 25-28 are rejected under 35 U.S.C. §102(e) as being anticipated by Chesla et al.'s U.S. Publication 2004/0250124 A1 (hereinafter "Chesla").

Claims 1-7 and 26 are rejected under 35 U.S.C. §102(e) as being anticipated by Lau et al.'s US Publication 2004/0062199 A1 (hereinafter "Lau").

Claims 13, 14, 16, 17, 22, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Each of the various rejections and objections are overcome by amendments that are made to the specification, drawing, and/or claims, as well as, or in the alternative, by various arguments that are presented.

Entry of this Amendment is proper under 37 CFR §1.116 because the amendment: (a) places the application in condition for allowance for the reasons discussed herein; (b) does not raise any new issue requiring further search and/or consideration since the amendments amplify issues previously discussed throughout prosecution; (c) satisfies a requirement of form asserted in the previous Office Action; (d) does not present any additional claims without canceling a corresponding number of finally rejected claims; or (e) places the application in better form for appeal, should an appeal be necessary. The amendment is necessary and was not earlier presented because it is made in response to arguments raised in the final rejection. Entry of the amendment is thus respectfully requested.

Any amendments to any claim for reasons other than as expressly recited herein as being for the purpose of distinguishing such claim from known prior art are not being made with an intent to change in any way the literal scope of such claims or the range of equivalents for such claims. They are being made simply to present language that is better in conformance with the form requirements of Title 35 of the United States Code or is simply clearer and easier to understand than the originally presented language. Any amendments to any claim expressly made in order to distinguish such claim from known

prior art are being made only with an intent to change the literal scope of such claim in the most minimal way, i.e., just to avoid the prior art in a way that leaves the claim novel and not obvious in view of the cited prior art, and no equivalent of any subject matter remaining in the claim is intended to be surrendered.

Also, because a dependent claim inherently includes the recitations of the claim or chain of claims from which it depends, it is submitted that the scope and content of any dependent claims that have been herein rewritten in independent form is exactly the same as the scope and content of those claims prior to having been rewritten in independent form. That is, although by convention such rewritten claims are labeled herein as having been "amended," it is submitted that only the format, and not the content, of these claims has been changed. This is true whether a dependent claim has been rewritten to expressly include the limitations of those claims on which it formerly depended or whether an independent claim has been rewritten to include the limitations of claims that previously depended from it. Thus, by such rewriting no equivalent of any subject matter of the original dependent claim is intended to be surrendered. If the Examiner is of a different view, he is respectfully requested to so indicate.

REMARKS

Rejections Under 35 U.S.C. §102

Claims 1, 3, 8-12, 15, 18-21, 23 and 25-28

Claims 1, 3, 8-12, 15, 18-21, 23, and 25-28 are rejected under 35 U.S.C. §102(e) as being anticipated by Chesla. The rejection is traversed.

Anticipation requires the presence in a single prior art disclosure of each and every element of the claimed invention, arranged as in the claim. The Chesla reference fails to disclose each and every element of the claimed invention, as arranged in independent claim 1.

Specifically, Chesla fails to teach or suggest at least “a plurality of routers forming a security perimeter of a network,” as recited in independent claim 1. The Examiner states that “Chesla clearly depicts and states there are a plurality of routers located at the periphery of the network (figure 1C, and page 7, paragraph 118). These routers work with the network appliance and therefor are part of the security system.” Applicants respectfully disagree with the Examiner’s rationale.

From the Examiner’s argument, it is not clear which element in Figure 1C the Examiner interprets as the network of Applicants’ claim 1, namely the ISP (option 1) or the customer network 56 (option 2). However, with either interpretation, the network elements 42 do not anticipate the above named element of Applicants’ claim 1.

Paragraph 118 of Chesla states:

“FIG. 1C is a block diagram that schematically illustrates network security system 20 deployed at the periphery of an Internet Service Provider (ISP) facility 40, in accordance with an embodiment of the present invention. The ISP facility typically comprises various network elements 42, such as routers, switches, bridges, servers, and clients. ISP 40 is connected to at least one WAN 44, typically the Internet, and many customer networks, such as a customer network 46. ISP 40 typically deploys security system 20 between the periphery of the ISP facility and customer network 46. The ISP may, for example, offer customers the security protection provided by system 20 as a managed service” (emphasis added).

Option 1: Paragraph 18 does not state that the network elements are located at the perimeter of the ISP, instead they are described as being included in the ISP, and thus, do not necessarily form the perimeter of the ISP. Only the security system is described as being possibly deployed at the periphery of the ISP. The Examiner states that the routers

work with the network appliance (security system), and thus, are part of the security system. According to such a rationale, the customer network, which also works with the network appliance, may be considered as a part of the security system. However, this clearly contradicts Chesla's arrangements because the security system serves to protect multiple customer networks. Moreover, following the Examiner's rationale and considering Applicant's claim 1 as a whole, if the network elements form the security perimeter of the ISP, then DDoS attacks should be directed at a location within the ISP. However, this also contradicts Chesla's arrangement because the ISP protects the customer network from attacks and such attacks are directed to locations within the customer network. The network elements do not protect the ISP from the attacks.

Option 2: In paragraph 18, Chesla discusses two possible locations for the network appliance (security system), namely at the periphery of the ISP or between the periphery of the ISP and customer network. Neither of these locations qualifies as the security perimeter of the network. Thus, neither the network elements, nor the network appliance (security system) form the security perimeter of the customer network. Furthermore, as described by Chesla, one ISP connects WAN to multiple customer networks. Therefore, as described by Chesla, there is only one point of connection between the multiple customers and multiple network elements, namely the network appliance (security system). Accordingly, even assuming that the security system is at the perimeter of one of the customer networks and the network elements are part of the security system, because there is only one point of connection between the network elements and the customer networks, the network elements at most may be considered as one element of the perimeter, and thus, at most anticipate only one router of Applicants' claim 1.

Additionally, Chesla fails to teach or suggest a "determining a discarding threshold." The Examiner asserts that the discarding threshold is disclosed in paragraph 225 of Chesla. Applicants respectfully disagree.

Paragraph 225 states:

"... The FIS module defuzzifies this fuzzy set, i.e., resolves the fuzzy set into a single value representing a degree of the attack, at a defuzzification step 296. For example, the degree of attack may have a range between 2 and 10, with higher numbers indicative of a greater likelihood that an attack is occurring. A degree of

attack value between 2 and 4 may represent a normal (non-attack) degree, a value between 4 and 8 may represent a suspect (potential) attack degree, and a value between 8 and 10 may represent an attack degree. The FIS module passes the degree of attack to network flood controller 60, at [a] degree of attack output step 298. The controller typically interprets the output as an indication of the occurrence of an attack when the degree of attack exceeds a certain threshold, e.g., 8 out of a range between 2 and 10" (emphasis added)

Accordingly, the cited portion discusses various attack degrees. More specifically, Chesla states that "8" might be a value of the threshold defining that an attack has occurred. However, the threshold defining an attack degree is simply not the same as Applicants' discarding threshold. As Chesla describes in paragraphs 132 through 134, even when a determined degree attack is above the threshold, i.e., "8," network packets are not necessarily discarded. For example, if after recognizing a degree attack above "8" it is determined that the attack was transient, no traffic is discarded. In contrast, the Applicants' discarding threshold defines a condition in which an incoming packet should be discarded at the security perimeter. Furthermore, Chesla's threshold is pre-defined as a number between 2 and 10. In contrast, Applicants' discarding threshold is not pre-defined, rather it is determined, using for example, cumulative probability function. Accordingly, Chesla does not teach or suggest each and every element of Applicants claim 1.

As such, independent claim 1 is not anticipated by Chesla and is allowable under 35 U.S.C. §102. Independent claims 8, 18, 26, and 27 recite relevant limitations similar to those recited in independent claim 1 and, as such, and at least for the same reasons as discussed above, these independent claims also are not anticipated by Chesla and are allowable under 35 U.S.C. §102. Because all of the dependent claims that depend from the independent claims include all the limitations of the respective independent claim from which they ultimately depend, each such dependent claim is also allowable.

Therefore, Applicants' claims 1, 3, 8-12, 15, 18-21, 23, and 25-28 are allowable under 35 U.S.C. §102(e). The Examiner is respectfully requested to withdraw the rejection.

Claims 1-7 and 26

Claims 1-7 and 26 are rejected under 35 U.S.C. §102(e) as being anticipated by Lau. The rejection is traversed.

The Lau reference fails to disclose each and every element of the claimed invention, as arranged in independent claim 1. Specifically, the Lau reference fails to teach or suggest at least “a plurality of packet attribute values aggregated from a plurality of routers forming a security perimeter of a network,” as recited in independent claim 1.

In the Final Office Action, the Examiner asserts that Lau discloses the above named element because “Lau teaches that there is a router and network processor located on the perimeter of the network (Figure 1) and ... that there could be a plurality of the network processors (page 2, paragraph 16). Therefore they form a plurality of security perimeter routers.” Applicants respectfully disagree with such reasoning.

Fig. 1 of Lau shows a network processor within a network, where the network also comprises at least one router and at least one server. The network processor is adapted to detect and filter IP packets travelling from the router to the server and is located in the communication path between the router and the server (see page 2, paragraph 15). However, nowhere in the cited portion does Lau teach that the network processor, router, or their combination is a perimeter router.

Moreover, assuming as the Examiner suggests that the network processor and the router are located on the perimeter of the network, a mere statement that the server, network processor, and the router may comprise fewer or additional units is not sufficient to anticipate the above named Applicants’ element. Lau does not explicitly teach that an additional unit would form the security perimeter of the network. Further, because such additional unit may be, for example, another server, the plurality of routers forming the security perimeters of the network is not inherent from Lau.

Furthermore, Applicants claim “a plurality of packet attribute values aggregated from a plurality of routers.” In other words, a packet attribute value of a packet received at one router of the plurality of routers is aggregated with a packet attribute value of another packet received at another router of the plurality of routers. In contrast, the cited portion of Lau describes an arrangement involving only one server, one network processor, and one router and merely mentions that additional units may be used.

Consequently, Lau does not discuss aggregation of packet attributes values from a plurality of routers. Moreover, because each router may aggregate packet attribute values of packets passing only through that router, aggregating packet attribute values from a plurality of routers is not inherent from Lau.

Therefore, the Lau reference fails to disclose each and every element of the claimed invention, as arranged in Applicants' independent claim 1. As such, independent claim 1 is not anticipated by Lau and is allowable under 35 U.S.C. §102. Because claims 1 - 6 depend from independent claim 1, and thus, include all the elements of claim 1, each such dependent claim is also allowable over Lau. Independent claim 26 recites relevant limitations similar to those recited in independent claim 1 and, as such, and at least for the same reasons as discussed above, independent claim 26 also is not anticipated by Lau and is allowable under 35 U.S.C. §102.

Therefore, Applicants' claims 1-7 and 26 are allowable under 35 U.S.C. §102(e). The Examiner is respectfully requested to withdraw the rejection.

Allowable Subject Matter

Claims 13, 14, 16, 17, and 22, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants thank the Examiner for the indication of allowable subject matter with respect to claims 13, 14, 16, 17, 22, and 24. However, for at least the reasons discussed above, the base claims are allowable and, as such, claims 13, 14, 16, 17, 22, and 24 are allowable.

The Examiner is respectfully requested to withdraw the objection.

Conclusion

It is respectfully submitted that the Office Action's rejections have been overcome and that this application is now in condition for allowance. Reconsideration and allowance are, therefore, respectfully solicited.

If, however, the Examiner still believes that there are unresolved issues, the Examiner is invited to call Eamon Wall at (732) 530-9404 so that arrangements may be made to discuss and resolve any such issues.

Respectfully submitted,

Dated: _____

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